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Expedited Proceeding Under 37 C.F.R. § 1.116
Examining Group 1731

PATENT APPLICATION
Attorney Docket No. 1835D/A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICANTS: CIMECIOGLU, A. Levent *et al.*
SERIAL NO.: 09/638 319 **GROUP ART UNIT:** 1731
FILED: 14 August 2000 **EXAMINER:** FORTUNA, José A.
ENTITLED: ALDEHYDE MODIFIED CELLULOSE PULP FOR THE
PREPARATION OF HIGH STRENGTH PAPER PRODUCTS

CERTIFICATE of MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence and any attachments referred to therein is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Box AF, Assistant Commissioner for Patents, Washington, DC 20231 on **29 January 2003.**


Deborah Mouzon

Box AF
Assistant Commissioner for Patents
Washington, D.C. 20231

REPLY UNDER 37 C.F.R. § 1.116

Dear Sir:

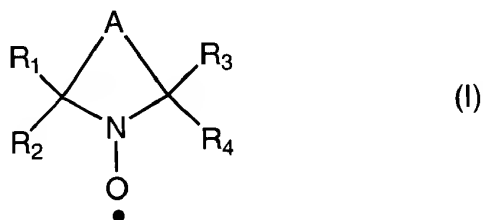
This Reply is in response to the final Office Action dated 27 August 2002. In reply to that outstanding Office Action, Applicant submits the following Amendments and Remarks –

AMENDMENTS

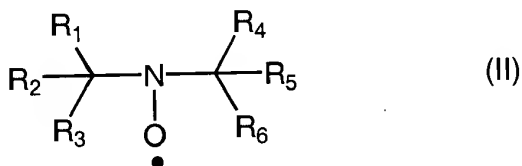
In the Specification:

Please replace the 4th paragraph of page 5 (continuing to page 8) of the Specification (believed to be the 15th paragraph of the Specification) with the following paragraph –

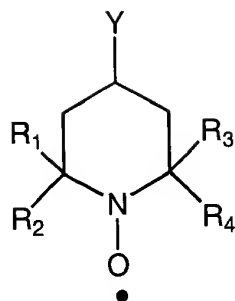
--The nitroxyl radical mediator used herein is a di-tertiary alkyl nitroxyl radical having one of the following formulas:



or



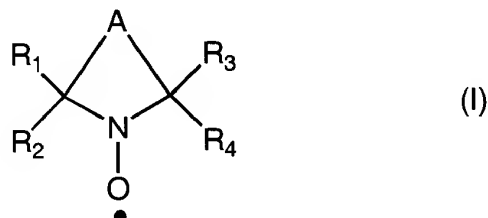
where A represents a chain of preferably two or three atoms, in particular carbon atoms or a combination of one or two carbon atoms with an oxygen or nitrogen atom, and the R groups represent the same or different alkyl groups. Chain A may be substituted by one or more groups such as alkyl, alkoxy, aryl, aryloxy, amino, amido or oxo groups, or by a divalent group or multivalent group which is bound to one or more other groups having formula I. Particularly useful nitroxyl radicals are di-tertiary alkyl nitroxyl radicals having the formula:



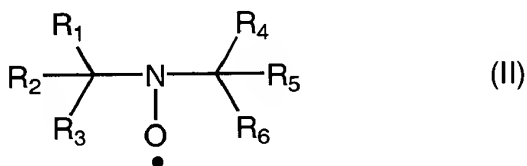
B¹ where Y is either H, OH or NH-C(O)-CH₃ and each of the R groups represent the same or different alkyl groups of 1 to 18 carbon atom and more particularly methyl groups. Nitroxyl radicals of this type include those where a) the R groups are all methyl (or alkyl of 1 carbon atom) and Y is H, i.e., 2,2,6,6-tetramethyl-1-piperdinyloxy (TEMPO); b) R groups are methyl and Y is OH and identified as 4-hydroxy TEMPO; and c) R groups are methyl and Y is NH-C(O)-CH₃ and identified as 4-acetamido-TEMPO. The preferred nitroxyl radical is TEMPO or 4-acetamido-TEMPO. The nitroxyl radical is used in an effective amount to mediate the oxidation and more particularly from about 0.001 to 20% by weight, preferably from about 0.01 to 0.1% by weight, based on the weight of cellulose, cellulose pulp or fiber. The nitroxyl radical can be added to the reaction mixture or generated in situ from the corresponding hydroxylamine or oxoammonium ion.

Following please find a MARKED UP VERSION OF THE 4TH PARAGRAPH OF PAGE 5 (CONTINUING TO PAGE 8) OF THE SPECIFICATION (believed to be the 15th paragraph of the Specification) showing all changes made relative to the previous version of that paragraph –

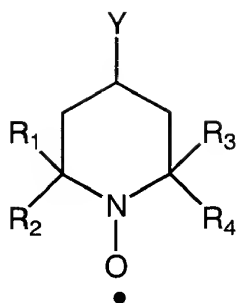
--The nitroxyl radical mediator used herein is a di-tertiary alkyl nitroxyl radical having one of the following formulas:



or



where A represents a chain of preferably two or three atoms, in particular carbon atoms or a combination of one or two carbon atoms with an oxygen or nitrogen atom, and the R groups represent the same or different alkyl groups. Chain A may be substituted by one or more groups such as alkyl, alkoxy, aryl, aryloxy, amino, amido or oxo groups, or by a divalent group or multivalent group which is bound to one or more other groups having formula I. Particularly useful nitroxyl radicals are di-tertiary alkyl nitroxyl radicals having the formula:



where Y is either H, OH or NH-C(O)-CH₃ and each of the R groups represent the same or different alkyl groups of 1 to 18 carbon atom and more particularly methyl groups. Nitroxyl radicals of this type include those where a) the R groups are all methyl (or alkyl of 1 carbon atom) and Y is H, i.e., 2,2,6,6-tetramethyl-1-piperdinyloxy (TEMPO); b) R groups are methyl and [X] Y is OH and identified as 4-hydroxy TEMPO; and c) R groups are methyl and Y is NH-C(O)-CH₃ and identified as 4-acetamido-TEMPO. The preferred nitroxyl radical is TEMPO or 4-acetamido-TEMPO. The nitroxyl radical is used in an effective amount to mediate the oxidation and more particularly from about 0.001 to 20% by weight, preferably from about 0.01 to 0.1% by weight, based on the weight of cellulose, cellulose pulp or fiber. The nitroxyl radical can be added to the reaction mixture or generated in situ from the corresponding hydroxylamine or oxoammonium ion.--

In the Claims:

Please cancel claims 1, 8, 9, 17, 22, 24 and 25 without prejudice or disclaimer as to future prosecution. Please replace claims 2-7, 10-12, 14-16, 18-21 and 23 with the following claims –

2. (Amended) The aldehyde-modified cellulose pulp of claim 26 wherein the aldehyde-modified cellulose pulp has from about 5 to about 20 mmoles of aldehyde per 100 g of cellulose.

3. (Amended) The aldehyde-modified cellulose pulp of Claim 26 having a wet strength to dry strength ratio of at least 20%.

4. (Amended) The aldehyde-modified cellulose pulp of Claim 26 wherein the paper has an improved compression strength and resistance of greater than about 1% over that of a paper prepared from a corresponding unmodified cellulose pulp.

5. (Amended) The aldehyde-modified cellulose pulp of Claim 4 wherein the paper has an improved compression strength and resistance of greater than about 5%.

6. (Amended) The aldehyde-modified cellulose pulp of claim 4 wherein the improved compression strength and resistance is measured under conditions of high humidity.

7. (Amended) The aldehyde-modified cellulose pulp of Claim 26 wherein the cellulose pulp has a ratio of aldehyde to carboxylic acid functionality of about 0.2 or more.

10. (Amended) The method of Claim 28 wherein the aldehyde-modified cellulose pulp has a wet strength/dry strength ratio of at least 20%.

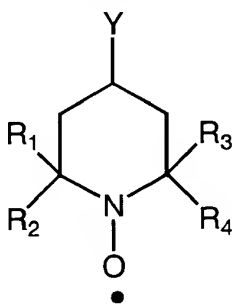
11. (Amended) The method of claim 28 wherein the aldehyde-modified cellulose pulp has an improvement in compression strength and resistance of greater than about 1% over a corresponding unmodified cellulose pulp under standard environment conditions.

B3 12. (Amended) The method of claim 11 wherein the aldehyde-modified cellulose pulp has an improvement in compression strength and resistance of greater than about 5%.

B4 14. (Amended) The method of Claim 28 wherein the oxidant has an equivalent oxidizing power of from about 0.05 to 5.0 g of active chlorine per 100 g of cellulose.

15. (Amended) The method of Claim 28 wherein the oxidant is sodium hypochlorite or sodium hypobromite.

16. (Twice amended) The method of Claim 28 wherein the nitroxyl radical has the formula:



where Y is H, OH or NH-C(O)-CH₃; and R₁, R₂, R₃ and R₄ represent the same or different alkyl groups of 1 to 18 carbon atoms.

18. (Amended) The method of Claim 28 wherein the aldehyde content of the cellulose is from about 5 to 20 mmole/100 g of cellulose.

19. (Amended) The method of Claim 15 wherein the oxidant is sodium hypobromite formed in situ by the addition of sodium hypochlorite and sodium bromide.

Be 20. (Amended) The method of Claim 28 wherein the cellulose material has a ratio of aldehyde to generated carboxylic acid functionality of greater than or equal to 0.5 based on mmole/100 g of cellulose.

21. (Amended) The method of Claim 15 wherein from about 0.1 to 10% by weight of sodium hypochlorite based on the weight of cellulose and from about 0.1 to 5% by weight of sodium bromide based on the weight of cellulose are used.

23. (Amended) Paper produced by the method of Claim 28.

Following please find a MARKED UP VERSION OF CLAIMS 2-7, 10-12, 14-16, 18-21 and 23 showing all changes made relative to the previous versions of those claims –

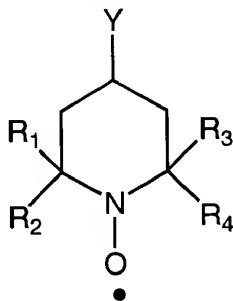
2. (Amended) The [paper] aldehyde-modified cellulose pulp of claim [1] 26 wherein the aldehyde-modified cellulose pulp has from about 5 to about 20 mmoles of aldehyde per 100 g of cellulose.
3. (Amended) The [paper] aldehyde-modified cellulose pulp of Claim [2 which has] 26 having a wet strength to dry strength ratio of at least 20%.
4. (Amended) The [paper] aldehyde-modified cellulose pulp of Claim [3] 26 wherein the paper has an improved compression strength and resistance of greater than about 1% over that of a paper prepared from a corresponding unmodified cellulose pulp.
5. (Amended) The [paper] aldehyde-modified cellulose pulp of Claim 4 wherein the paper has an improved compression strength and resistance of greater than about 5%.
6. (Amended) The [paper] aldehyde-modified cellulose pulp of claim 4 wherein the improved compression strength and resistance is measured under conditions of high humidity.
7. (Amended) The [paper] aldehyde-modified cellulose pulp of Claim [2] 26 wherein the cellulose pulp has a ratio of aldehyde to carboxylic acid functionality of about 0.2 or more.
10. (Amended) The method of Claim [9] 28 wherein the [prepared paper] aldehyde-modified cellulose pulp has a wet strength/dry strength ratio of at least 20% [or more].
11. (Amended) The method of claim [10] 28 wherein the [prepared paper] aldehyde-modified cellulose pulp has an improvement in compression strength and resistance of greater than about 1% over [paper prepared from] a corresponding unmodified cellulose pulp under standard environment conditions.

12. (Amended) The method of claim 11 wherein the [prepared paper] aldehyde-modified cellulose pulp has an improvement in compression strength and resistance of greater than about 5%.

14. (Amended) The method of Claim [9] 28 wherein the oxidant has an equivalent oxidizing power of from about 0.05 to 5.0 g of active chlorine per 100 g of cellulose.

15. (Amended) The method of Claim [14] 28 wherein the oxidant is sodium hypochlorite or sodium hypobromite.

16. (Twice amended) The method of Claim [15] 28 wherein the nitroxyl radical has the formula:



where Y is H, OH or NH-C(O)-CH₃; and R₁, R₂, R₃ and R₄ represent the same or different alkyl groups of 1 to 18 carbon atoms.

18. (Amended) The method of Claim [16] 28 wherein the aldehyde content of the cellulose is from about 5 to 20 mmole/100 g of cellulose.

19. (Amended) The method of Claim [18] 15 wherein the oxidant is sodium hypobromite formed in situ by the addition of sodium hypochlorite and sodium bromide.

20. (Amended) The method of Claim [19] 28 wherein the cellulose material has a ratio of aldehyde to generated carboxylic acid functionality of greater than or equal to 0.5 based on mmole/ 100 g of cellulose.

21. (Amended) The method of Claim [19] 15 wherein from about 0.1 to 10% by weight of sodium hypochlorite based on the weight of cellulose and from about 0.1 to 5% by weight of sodium bromide based on the weight of cellulose are used.

23. (Amended) Paper produced by the method of Claim [9] 28.

Please add the following new claims –

26. Aldehyde-modified cellulose pulp having improved wet strength, temporary wet strength and dry strength properties prepared by oxidizing cellulosic material in the presence of a nitroxyl radical mediator wherein the aldehyde-modified cellulose pulp has from about 1 to about 20 mmoles of aldehyde per 100 g of cellulose.

27. Paper produced from the aldehyde-modified cellulose pulp of Claim 26.

28. A method of making aldehyde-modified cellulose pulp having improved wet strength, temporary wet strength and dry strength properties comprising the step of:

oxidizing cellulosic material in the presence of a nitroxyl radical mediator,

wherein the aldehyde-modified cellulose pulp has from about 1 to about 20 mmoles of aldehyde per 100 g of cellulose, and

wherein the aldehyde-modified cellulose pulp is usable as pulp stock or as a component of the pulp stock.

REMARKS

Claims 1-25 are pending in the application. Claims 1-25 are rejected. Claims 1, 8, 9, 17, 22, 24 and 25 have been canceled. Claims 2-7, 10-12, 14-16, 18-21 and 23 are amended. New claims 26-28 have been added. No new matter is submitted with these Amendments.

Reply to the Objection to the Disclosure

The Examiner has objected to the disclosure for various informalities. Specifically, the Examiner states that "in page 6, line 20, the '... X is OH...' should be '... Y is OH...'".

The disclosure has been amended as noted by the Examiner. It is believed that this amendment overcomes the Examiner's objection to the disclosure. Withdrawal of the objection to the disclosure is respectfully requested.

Reply to the Rejection of Claims 1-3, 7 and 8 under 35 U.S.C. § 101

The Examiner has provisionally rejected Claims 1-3, 7 and 8 as claiming the same invention as that of claims 1-5 of copending Application No. 09/754,176. Claims 1-5 have been canceled in Application No. 09/754,176. Accordingly, the rejection of Claims 1-3, 7 and 8 under 35 U.S.C. § 101 is now moot.

Reply to the Rejection of Claims 1-15 under 35 U.S.C. § 103(a)

The Examiner has rejected Claims 1-15 as being unpatentable over U.S. Patent No. 5,698,688 to Smith *et al.* ("Smith"). Specifically, the Examiner states –

Regarding Claims 1-2, 9 and 23, Smith et al. teach a paper made with aldehyde modified fibers, see abstract. Smith et al. teach also that the aldehyde groups increase the temporary strength of the fibers, see abstract. Even though Smith et al. are silent with respect to the number of moles of aldehydes in the fibers, Smith et al. teach that the presence of aldehyde groups is evidenced by an increase of wet strength of the paper formed from the modified fibers and that the degree of oxidation can be readily optimized for a given fiber weight to obtain desired degree of aldehyde groups in the fibers and that it would be desirable to avoid over oxidation so to control the formation of carboxylic acids groups in the fibers, see column 7, lines 8-20. Therefore, it is clear that optimizing the degree of aldehyde to the claimed degree would have been obvious to one of ordinary skill in the art, in order to optimize the strength of the fibers. Regarding Claims 3-8, and

10-15, Smith et al. show in column 11, lines 3-24, paper having ratio of wet to dry strength greater than 20%. The paper inherently has compressible strength and resistance improvement over 5% as compared with corresponding unmodified pulp, since they have the same amount of aldehyde groups in the fibers. Regarding claim 15, Smith et al. teach also that any catalyst can be used in the reaction, see column 5, lines 59-62, and therefore the sue of the claimed catalyst would have been obvious to one of ordinary skill in the art since they are well known in the art and it has been held that “[W]here two equivalents are interchangeable for their desired function, substitution would have been obvious and thus, express suggestion of desirability of the substitution of one for the other is unnecessary.” *In re Fout* 675 F.2d 297, 213 USPQ 532 (CCPA 1982); *In re Siebentritt*, 372 F.2d 566, 152, USPQ 618 (CCPA 1967).

With respect to Smith teaching the range of aldehyde content as claimed and the process of oxidation used by Smith, the Examiner states –

... that the aldehyde content of the fibers is an optimization variable and therefore obvious to one of ordinary skill in the art. Smith teaches that the aldehyde groups increase the strength of the fibers and that the presence of aldehyde groups is evidenced by an increase of wet strength in the paper formed from the modified fibers, column 7, lines 8-20. As to the method of making the fibers, this is irrelevant since it has not been claimed.

With respect to Applicants’ arguments of unexpected results, the Examiner states –

... Smith explicitly teaches that the aldehyde content of the fibers increases the wet strength of the fibers, so one would expect an increase in the wet strength of the paper produced with the modified fibers.

For the following reasons, Applicants respectfully traverse the Examiner’s rejection of claims 1-15 as being unpatentable over Smith.

Referring to Smith, therein is disclosed aldehyde-modified cellulosic fibers formed by esterifying cellulosic fibers with a 1,2-disubstituted alkene that has at least one carboxylic acid group reactive with cellulosic hydroxyl groups and oxidizing the esterified fibers to form aldehyde groups (Abstract; col. 2, lines 41-50; col. 3, lines 14-16). “1,2-disubstitute” means that each of the doubly bonded carbons is singly bonded to one carbon atom other than the doubly bonded carbon atom and to a hydrogen atom (-HC=CH-) (col. 3, lines 24-27). With specific reference to the preferred 1,2-disubstituted alkene illustrated in column 6 of Smith, Smith describes *intermediate cellulosic fiber* compositions made by esterifying cellulose with an olefin (*i.e.*, double bond contained within an aliphatic ring) containing carboxylic acid or acid derivative (acid amide) (*see*, col. 3, lines 14-23). This is step (1) of the two-step Smith process.

Once esterified, this intermediate cellulosic fiber is then oxidized to form the modified cellulosic fibers of Smith (col. 6, 19-21; see the resultant modified cellulosic fiber structure illustrated in column 7 of Smith). "Oxidation is accomplished by contacting the intermediate cellulosic fibers with an oxidizing agent under conditions to cause the formation of aldehyde groups on the residue of the carboxylic alkene" (col. 6, lines 26-29). This is step (2) of the two-step Smith process. Oxidizing agents include ozone and potassium, with ozone being preferred (col. 6, lines 49-50).

As seen above, Smith teaches a first step of esterification of cellulosic fiber with an olefin containing carboxylic acid or acid amide. The intermediate cellulosic fiber produced is then in a second step oxidized to form the resultant aldehyde-modified cellulosic fiber. Using the invention of Smith, the amount of acid/aldehyde that can be introduced to the fiber is controlled by the degree of derivatization with (or, esterification of) the olefin containing carboxylic acid. Accordingly, Smith teaches oxidizing the alkene groups substituted on the fiber (see the structure illustrated in column 6 of Smith), *i.e.*, oxidizing the double bond of the olefin to an aldehyde (col. 6, lines 28-29 and 32-34).

In contrast to Smith, the present invention teaches aldehyde-modified cellulose pulp that is prepared by oxidation of a hydroxyl group to an aldehyde in the presence of a nitroxyl radical mediator, which is an entirely different process than that of Smith and results in a completely different product. Simply because double bond oxidation may produce an aldehyde or that aldehyde content may be controlled thereby does not suggest to one skilled in the art that oxidation via an entirely different process will produce the same result.

As the aldehyde-modified cellulosic fibers of Smith are different from those fibers of the present invention, no optimization exercise based on the disclosure of Smith will enable one of ordinary skill in the art to obtain the aldehyde-modified compositions of the present invention. Further, no such optimization exercise will allow one of ordinary skill in the art to anticipate the high strength properties of the present invention.

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the

proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

As shown above, Smith is directed towards esterification of cellulosic fiber with an olefin containing carboxylic acid or acid amide, and then oxidizing the intermediate cellulosic fiber produced to form the resultant aldehyde-modified cellulosic fiber. Smith does not teach or suggest the single step of oxidizing cellulose pulp in a suitable medium with an oxidant in the presence of a nitroxide radical mediator in order to obtain a cellulose aldehyde derivative. Accordingly, Smith does not teach or suggest the presently claimed invention.

Further, the products of Smith always create a 1:1 ratio of aldehyde to carboxyl groups on the derivative (see the structure illustrated in column 7). In contrast, in the nitroxy mediated oxidation process of the present invention, aldehyde and carboxyl functional groups are created directly on the cellulose, and not on a derivative as in Smith. As such, the compositions and process of Smith differ from the compositions and process of the present invention.

It is believed that these remarks overcome the Examiner's rejection of claims 1-15 as being unpatentable over Smith under 35 U.S.C. § 103(a). Withdrawal of the rejection is respectfully requested.

Reply to the Rejection of Claims 16-22, 24 and 25 under 35 U.S.C. § 103(a)

The Examiner has rejected Claims 16-22, 24 and 25 as being unpatentable over U.S. Patent No. 5,698,688 to Smith *et al.* ("Smith") in view of the Tetrahedron article by Arjan E. J. de Nooy *et al.* (Tetrahedron, *Selective Oxidation of Primary Alcohols Mediated by Nitroxyl*

("de Nooy"). Specifically, the Examiner states –

Smith et al. invention has been previously discussed, see above. Smith et al. fail to teach the use of nitroxyl radicals as claimed in claims 16-22 and 24-25. However, Nooy et al. teach that primary and secondary alcohols, such as the one in cellulose can be oxidized to aldehyde and/or carboxylate depending on the reactions conditions and the substrate, see page 8023 and teach in page 8027 that using inorganic solvents without water or with low concentration of water the reaction stops at the aldehyde stage. Therefore, the use of nitroxyl Radical containing compounds, such as TEMPO, to form aldehyde modified fibers such as the ones disclosed by Smith et al. would have been obvious to one of ordinary skill in the art, since one of ordinary skill in the art would have reasonable expectation of success if Nitroxyl Radical containing compounds are used. One of ordinary skill in the art would find that increasing the aldehyde content of fibers using Nitroxyl Radical is another viable alternative, in view of Nooy et al. teachings.

With respect to Applicants' arguments that the combination of references is improper because de Nooy teaches the oxidation in an organic solvent and one skilled in the art would not expect Applicants' oxidation, which does not require the presence of an organic solvent, to produce aldehyde fibers, the Examiner states that "there is nothing in the claims that limits the formation of aldehyde in fibers in water or non-organic solvent."

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 16-22, 24 and 25 as being unpatentable over Smith in view of de Nooy.

Smith was discussed above and in Applicants' reply of 13 June 2002, those arguments being incorporated herein. Referring to de Nooy, therein is disclosed the results of a study of the kinetics of TEMPO-mediated oxidation of methyl α -D-glucopyranoside to sodium methyl α -D-glucopyranosiduronate (Abstract, p. 8023). de Nooy states that the use of stable organic nitroxyl radicals such as TEMPO as mediators for the oxidation of primary and secondary alcohols is well known (p. 8023, 1st paragraph). de Nooy further states that the oxidation of primary alcohols stops at the [intermediate] aldehyde stage before obtaining the acid when the reaction occurs in organic solvents *without water or with only a low concentration of water* (p. 8027, 1st full paragraph). de Nooy then concludes "that the hydrated aldehyde intermediate is oxidised in the same way as alcohol" (p. 8027, 1st full paragraph). de Nooy makes no mention of possible conditions for isolating aldehyde from this chemistry other than reducing or eliminating water from the solvent.

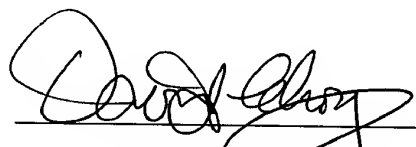
In contrast to de Nooy, the present invention is able to control the oxidation of the cellulose pulp to the aldehyde stage in the presence of water as the sole reaction media, *i.e.*, very large concentrations of water (see Specification: p. 4, lines 22-23; p. 9, lines 9-11 and 17-18). Accordingly, de Nooy teaches away from the presently claimed invention. Further, as shown above, the aldehyde-modified cellulosic fibers of Smith and their process of production differ from the aldehyde-modified fibers of the present invention. As such, even if one skilled in the art were to combine the teachings of de Nooy with the teachings of Smith, one still would not be lead to the cellulose aldehyde derivatives of the present invention and their method of production. Further, based on the teachings of de Nooy as indicated above, one skilled in the art would be taught away from the presently claimed invention.

It is believed that these remarks overcome the Examiner's rejection of claims 16-22, 24 and 25 as being unpatentable over Smith in view of de Nooy under 35 U.S.C. § 103(a). Withdrawal of the rejection is respectfully requested.

It is believed that the above amendments and remarks overcome the Examiner's rejections of the claims under 35 U.S.C. § 103(a) as indicated herein above. Withdrawal of the rejection is therefore respectfully requested. Allowance of the claims is believed to be in order, and such allowance is respectfully requested.

Dated: 29 January 2003

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